

present in one angular rod orientation and an unrestricted gap in another orientation."

In contradistinction, the valve shown in Rigby is symmetric with respect to the axis of rotation, and does not therefore meet the required limitation of providing a binary end as that word is used in the now pending claims. The Rigby disclosure cannot, therefore, sustain a prima facie case of obviousness, as the Rigby valve lacks this limitation, and there is no suggestion whatsoever in the Rigby disclosure to modify or alter the Rigby valve to render it asymmetrical with respect to the axis of rotation. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

Were the Examiner is to continue to rely on Rigby in attempting to set forth a prima facie of obviousness, the Examiner must present a convincing line of reasoning as to why a skilled artisan would have been led to modify the Rigby valve such that it was not symmetric about the axis of rotation. Rigby itself offers no such suggestion, and in fact, modifying the Rigby valve in such a manner would serve no purpose whatsoever for Rigby. The Examiner may be tempted to offer that it would have been obvious to modify the Rigby valve in attempting to solve the problem confronted by the Applicant. Such an argument, would, however, be an exercise in classic hindsight reconstruction. Only by using the Applicant's disclosure as a template could the Examiner find the motivation to modify the Rigby valve in such a manner.

The Examiner's arguments with respect to the possibility that a valve, such as that disclosed in Rigby or Wangler (see the basis for the Examiner's Office Action of 04/10/00, since withdrawn) is capable of providing a partially obstructed flow path, is perhaps theoretically true, but as a practical matter impossible. The Applicant has claimed that the valve is alternately open or partially obstructed. In other words, the valve is operated in two principal

positions, one where matrix material is trapped by the valve, while the flow of fluid to flow by, and another where the matrix material is released along with the fluid flow. As shown in Fig. 5a, this is accomplished by designing the valve so that in the position where it is most near to being completely closed, a fluid flow is still maintained. The Applicant is confident that the Examiner would concede that the valves cited in the record are designed to close completely, thus failing to allow a partial flow of fluid, but not matrix material, in their most closed position. Nevertheless, the Examiner suggests that it is possible to almost close the Rigby valve such that a flow of fluid is permitted, while a flow of the matrix material is not, and as such the operation of the valves as claimed by the Applicant is inherent in the prior art.

As is plain in the Rigby disclosure, the Rigby valve is a conventional stopcock operated by hand. It is designed to be in a fully open or fully closed position. Since the matrix materials discussed in the specification range from 20-100 micrometers (see line 1, page 4), the Applicant would first point out that the Examiner is suggesting that the Rigby valve can be effectively controlled, again, by hand, to a tolerance of less than 20 micrometers, in order to effectively trap the matrix material and still allow fluid to pass. The Applicant does not believe this to be possible, but even if it is, it still cannot support a prima facie case of obviousness.

In the first instance, the difficulty of attempting to control the opening and closing of a stopcock valve to sub 20 micrometer tolerances is so readily apparent on its face that the Applicant does not believe that a skilled artisan would even attempt to do so. In this regard, even with the benefit of the Applicant's disclosure and the Examiner's suggestions, the operation of the Rigby valve in the manner suggested by the Examiner is still not obvious because such operation would be an exercise in futility and frustration and that a skilled artisan would never attempt to operate the valve of Rigby in the manner suggested by the Examiner. Secondly, even if a skilled artisan were to attempt such an exercise, and even occasionally to succeed (a hypothetical the Applicant regards as dubious), such occasional success is still insufficient to

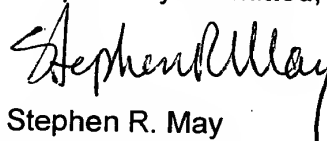
establish obviousness. For a claim to be inherent in the prior art, it "is not sufficient that a person following the disclosure *sometimes* obtain the result set forth in the [claim]; *it must invariably happen.*" (emphasis added). *Standard Oil Co. (Indiana) v. Montedison, S.p.A.*, 664 F.2d 356, 372, 212 USPQ 327, 341 (3d Cir. 1981), *cert. Denied*, 456 U.S. 915, 215 USPQ 95(1982). Plainly, a skilled artisan attempting to operate a valve in the manner suggested by the Examiner would not be able to "invariably" open and close the valves to tolerances of 20 micrometers. As such, the Examiner cannot establish that the Rigby valve, or indeed any valve, not designed to be closed to tolerances of as little as 20 micrometers, is alternately open or partially obstructed, as required by the pending claims.

The Applicant therefore respectfully requests that the Examiner withdraw these prior objections and allow the claims to issue to patent.

Closure

Applicant has made an earnest attempt to place the above-referenced application in condition for allowance and action toward that end is respectfully requested. In the alternative, the Applicant respectfully requests that the Examiner enter the foregoing amendments to place the Application in better form for appeal. Should the Examiner have any further observations or comments, he is invited to contact the undersigned for resolution.

Respectfully submitted,



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